Bi-weekly Wetland and Stream Corridor Restoration Update

Issue 46

January 30, 2003

Many of the following links are to locations outside the EPA Web site. EPA does not maintain those pages and is not responsible for their content. These links are provided as a service to the user. EPA does not endorse the materials, products, companies, or opinions included therein.

Welcome to the Bi-weekly Wetland and Stream Corridor Restoration Update. This Web site

- Provides current information on wetland and river corridor restoration projects
- Recognizes outstanding restoration projects
- Offers a forum for information sharing

We welcome the submission of articles and announcements related to your restoration project. Just send your write-up to EPA's contractor at restorationupdate@tetratech-ffx.com or mail it to Rebecca Schmidt, Bi-weekly Restoration Update Coordinator, Tetra Tech, Inc., 10306 Eaton Place, Suite 340, Fairfax, VA 22030. We will carefully consider your submission for inclusion in a future update. If your submission is selected, please note that it might be edited for length or style before being posted. Because this Web site is meant to be a public forum on restoration information, we cannot post any information that is copyrighted or information that advocates or lobbies for any political, business, or commercial purposes or has the appearance of doing so.

Contents

Feature Article (Page 2) - The feature article recognizes outstanding restoration projects or programs.

Community-Based Restoration Partnerships (Page 3) - This section highlights innovative community-based partnerships working to restore wetlands and river corridors.

Achieving Restoration Results (Page 5) - These brief articles describe restoration projects in which noticeable results have been achieved.

Funding for Restoration Projects (Page 6) - Here you'll find information pertaining to grants and other funding sources available to local watershed groups and other grassroots community organizations to implement restoration projects.

News and Announcements (Page 7) - This section includes up-to-date information on regulatory issues affecting restoration, conference and workshop announcements, and other newsworthy tidbits.

Upcoming Conferences and Events (Page 9) - A list of workshops, conferences, and restoration-related events is provided on this page.

Restoration-Related Web Sites (Page 10) - Use these links to check out other groups that are helping in the effort to restore wetlands and river corridors.

Information Resources (Page 12) - Books, journals, fact sheets, videos, and other information resources to aid you in your restoration project are provided here.

Feature Article

Restoring Habitat at Connecticut's Great Island
Adapted from an article that appeared in the September/October 2002 issue of Connecticut Wildlife (http://dep.state.ct.us/burnatr/wildlife/geninfo/cw.htm).

This past June, work was completed on a 3-year project to restore degraded coastal wetlands at the Roger Tory Peterson Wildlife Area at Great Island, in Old Lyme, Connecticut. Well-known to waterfowlers and birders, this 588-acre tidal marsh at the mouth of the Connecticut River provides habitat for a wide variety of wildlife, especially birds. Unfortunately, the ecological value of the Peterson Wildlife Area and the area's use by wildlife had been diminishing over time due to the effects of grid ditching (explained below) and the encroachment of the invasive plant *Phragmites*.

Virtually all of Connecticut's coastal marshes were "ditched" in the 1930s. That is, ditches were cut into the surface of the marshes in a grid pattern to drain off water and remove mosquito breeding areas. Unfortunately, this process drained the open-water habitats favored by wildlife, especially waterfowl. Grid ditching also resulted in decreased soil salinity, thus enabling the salt-intolerant *Phragmites* to become better established and eventually displace native plants, reducing diversity.

To help remedy this problem, the Wildlife Division applied for funds through the North American Wetland Conservation Act (NAWCA) grant program and received a $218,000 grant. This program is administered through the U.S. Fish and Wildlife Service (USFWS) and provides funds for wetland protection, restoration, and enhancement. NAWCA grant funds must be matched by contributions from project partners. Partners for the Roger Tory Peterson Wildlife Area restoration included the U.S. Fish and Wildlife Service, Ducks Unlimited, Valley Shore Waterfowlers, The Nature Conservancy, Connecticut Waterfowl Association, and the Northeast Utilities' Foundation. The greatest portion of the matching funds was provided by supporters of Connecticut's Duck Stamp Program; hunters and citizens contribute to the Program through the purchase of state Duck Stamps. The value of a specialized amphibious mulching machine purchased with Duck Stamp money, was leveraged as the bulk of the matching funds. The mulching machine was an essential tool in the wetland restoration work. This public/private partnership helped restore tidal wetlands essential to Connecticut's migratory and nesting shorebirds, finfish, and native plant species.

Restoration work at the Peterson Wildlife Area was conducted by the Connecticut Wildlife Division's Wetland Habitat and Mosquito Management (WHAMM) Program, with assistance from the USFWS

McKinney National Wildlife Refuge. The WHAMM Program, established in 1994, was one of the first wetland habitat restoration programs in the country with dedicated staff and specialized, low-ground pressure equipment used exclusively in restoration activities.

Dig, fill and monitor

After the physical restoration work, the monitoring process began to examine the impact of the exercise on birds, vegetation and water quality at the site. The WHAMM Program, in cooperation with the DEP Office of Long Island Sound Programs technical staff and Scott Warren, a professor of botany at Connecticut College, will continue monitoring the site during 2003. Data collected during the monitoring period can prove beneficial to the WHAMM Program as it undertakes other proposed projects along the Connecticut River estuary.

The goal of the Peterson Wildlife Area project was to restore 300 acres of degraded marsh habitat to a mixture of brackish meadows interspersed with shallow, open water areas, a condition that approximates the preditched marsh environment. The restoration also eliminated 200 acres of *Phragmites* by plugging and filling ditches to restore the natural tidal flow of saltwater into the marsh. A 180-acre site at the Peterson Wildlife Area now has 30 new ponds with pannes (shallow depressions) and plugged grid ditches. Native plants and grasses have been able to return to the area, benefitting wildlife.

Since the completion of the habitat-restoration project at the Peterson Wildlife Area, a number of brackish plant species, such as cattail, bulrush, tearthumb, water hemp, and marsh mallow have been reestablished. Several bird species, such as black ducks, mallards, green-winged teal, egrets, and rails have also been returning to the wetland. Other wildlife observed include muskrats, meadow voles, and deer. For more information see http://dep.state.ct.us/burnatr/wildlife/special/greatis.htm.

If you'd like your project to appear as our next featured article, e-mail a short description to restorationupdate@tetratech-ffx.com.

Community-Based Restoration Partnerships

Creek Stewards Activate a Neighborhood

An Oregon neighborhood stream habitat stewardship group is working to restore a local creek while educating area residents. Known as the Bridlemile Creek Stewards, this group of dedicated volunteers works all along the Bridlemile neighborhood's local tributaries to control erosion; protect property; improve water quality; and enhance fish, wildlife, and human habitat. The creeks in the large Bridlemile neighborhood in southwest Portland drain into Fanno Creek, which flows into the Tualatin and Willamette Rivers before reaching the Columbia River.

The Bridlemile Creek Stewards encounter problems common to hilly southwest Portland neighborhoods, such as bank collapse, threat of damage to structures, water quality impacts from stormwater runoff, and problems with invasive plants. The group frequently partners with other local groups and organizations, including Southwest Neighborhoods, Inc., City of Portland–Bureau of Environmental Services (BES),

Tualatin Riverkeepers, Fans of Fanno Creek, and other agencies and community groups, to maximize the use of available technical resources and most effectively address joint concerns.

Since October 1998, the group has successfully initiated and carried out a number of restoration projects. More than 4 acres, including at least 2,000 feet of stream bank, have been cleared of the invasive ivy plant, and more than 200 trees have been saved from ivy infestations. The group has planted more than 7,000 native plants, installed erosion control, and held four annual Southwest Portland Neighborhood Stream Festivals from 1999 to 2002. It reaches out to involve as many neighborhood residents as possible and to engage and encourage all of Bridlemile's property owners to take responsibility for improving water quality and habitat.

The success of their projects and the active participation by diverse members of the Bridlemile neighborhood earned the group a Community Service award from the nonprofit group SOLV (www.solv.org), the 2002 Spirit of Portland Neighborhood of the Year Award, and nominations for the Tualatin Riverkeepers (www.tualatinriverkeepers.org) Green Heron Award in 2000, 2001, and 2002. For more information, see http://home.attbi.com/~steve.mullinax/bridlemile/BCS.htm or contact Steve Mullinax at 503-768-9065 or Greg Schifsky at 503-246-2714.

Annual Volunteer Event Promotes Wetland Restoration

Each year local volunteers give a boost to the Ohio Chapter of the Nature Conservancy's efforts to restore Ohio wetlands. In summer 2002 more than 20 volunteers participated in the Ohio Chapter's 2nd Annual Northeast Ohio Volunteer Stewardship Summer Fling. This year the restoration efforts took place at two sites in northeastern Ohio, Herrick Fen and Beck Fen. The volunteers focused primarily on removing invasive species that were crowding out native species and disrupting normal fen ecology.

Restoration at Beck Fen focused on the removal of cattails. Beck Fen was formed approximately 18,000 years ago when retreating glaciers left behind large deposits of water-saturated gravel. The cold, oxygen-deficient, alkaline water that flows to the surface provides habitat for rare fen species such as the showy lady's-slipper orchid. Invasion by cattails is an ongoing threat to this wetland's ecology and the rare species it harbors. Removal was therefore a top priority at the Summer Fling. Volunteers used the "cut stump" method of removal, which calls for cutting down the targeted species, followed by dripping small amounts of herbicide carefully on the cut stump to prevent new growth. This summer's volunteer crew made excellent headway in cattail removal in new areas that had not been managed before.

The volunteers' restoration efforts at Herrick Fen focused on control of reed canary grass. Herrick Fen is noted for the tamarack fen and cinquefoil-sedge fen communities that it hosts. The fen supports one of the few reproducing populations of tamaracks in the state. The tamarack is unique because it is the only native conifer in Ohio that sheds its needles each year. Encroachment of reed canary grass was threatening the tamaracks and other native species. To control the reed canary grass, the volunteer crew removed the seeds from the grass, thereby preventing the invader from reproducing in the following year.

The Ohio Chapter continues to hold workdays to restore these and other wetlands in the state. Beck and Herrick Fen will welcome another crew of volunteers in early 2003 to battle a different invasive

species—the buckthorn. For more information about the Stewardship Summer Fling, see http://nature.org/wherewework/northamerica/states/ohio/news/news1119.html. For more information about the Ohio Chapter of the Nature Conservancy, see http://nature.org/wherewework/northamerica/states/ohio/.

If you are part of an innovative community-based partnership that is working to restore river corridors or wetlands, we'd like to hear from you. Please send a short description of your partnership to restorationupdate@tetratech-ffx.com.

Achieving Restoration Results

Forest Road Removal Restores Oregon Creek

In summer 2002 the U.S. Forest Service's Siuslaw National Forest took a big step toward restoring the health of Oregon's Cape Creek watershed. The National Forest closed and removed approximately 4.5 miles of Cape Creek Road, which ran alongside Cape Creek and was having adverse environmental impacts on it. The work included removing the asphalt, plowing and loosening the roadbed, removing culverts, and removing three concrete bridges. Project staff also worked to restore the riparian area where the road once stood by seeding the loosened road bed with native species.

In addition to saving the Forest Service the cost of maintaining the road, the project will greatly improve the health of Cape Creek and the wildlife it supports. Prior to its removal, the road impaired the hydrologic function of the stream for years. Culverts were small and frequently clogged with debris, blocking fish passage and causing water to flow out of the ditches and across and down the road. As water flowed over the road shoulders it eroded the soil surrounding the road, undercut it, and dumped silt directly into Cape Creek.

Fortunately, road removal did not deny the public access to the area. The public can still travel along a nearby stable ridgetop road that provides a safer route with minimal environmental impact. For more information, see www.fs.fed.us/r6/siuslaw/sopa-fall02.pdf or contact Siuslaw National Forest Supervisor's Office, 4077 Research Way, P.O. Box 1148, Corvallis, OR 97339; phone: 541-750-7000; Internet: www.fs.fed.us/r6/siuslaw.

Restoring Salmon Habitat

At the turn of the century, Knowles Creek, a tributary of the Siuslaw River in the Costal Range of Oregon, supported a quarter-million salmon annually in their journey to upstream spawning grounds. By 1980, when a landslide carrying mud, rock, and tree roots created a small dam in Knowles Creek, the stream was struggling to support a very small fraction of its former fish population.

After the landslide a remarkable thing happened—the fish returned. The landslide hadn't just blocked the stream; it had also created a rich pool in which the few surviving salmon could spawn. Learning

from this example, the Pacific Rivers Council initiated a new model for salmon-stream restoration. The Council found that they could enhance salmon spawning habitat by placing a series of man-made logjams into streams. Behind those logjams, creek beds that had once been scoured clean down to the bedrock built up a series of rich pools lined with gravel and leaf litter that are ideal spawning habitat for salmon. This restoration model reflects the natural system where trees die, fall into the stream, and create pools and refuges for fish.

Over the last 10 years, Pacific Rivers Council has worked with public and private landowners including the U.S. Forest Service and Handcock Timber Company to create artificial logjams along the length of Knowles Creek. Salmon continue to return to the stream in growing numbers to take advantage of this innovative restoration idea. For more information, see the article in Earth Share Oregon's Newsletter found at www.earthshare-oregon.org/News.html.

If you are part of an innovative restoration project that has had positive results, we'd like to hear from you. Please send a short description of your project to restorationupdate@tetratech-ffx.com.

Funding for Restoration Projects

Fish America's Community-based Habitat Restoration Funds

The American Sportfishing Association's (ASA) FishAmerica Foundation is accepting proposals for citizen-driven habitat restoration projects in 2003 under its partnership with the North American Oceanic Administration's (NOAA's) Community-based Restoration Program. The partnership encourages local efforts to accomplish meaningful, on-the-ground restoration of marine, estuarine, and riparian habitats, including salt marshes, seagrass beds, coral reefs, mangrove forests, and freshwater habitats important to anadromous fish species (e.g., salmon and striped bass that spawn in freshwater and migrate to the sea). Emphasis is on using a hands-on, grassroots approach to restore fisheries habitat, across coastal America.

Proposals will be jointly evaluated by NOAA technical staff and FishAmerica staff and will be ranked based on the following criteria:

- Extent to which the project will improve habitat for fisheries resources
- Technical merit and project feasibility
- Specificity of results, benefits, and products
- Cost effectiveness and budget detail and justification
- Partnership/cooperation from community groups and other organizations

The total amount of funding awarded under this solicitation will depend on the total funds made available to the FishAmerica Foundation/NOAA Restoration Center partnership. Funding requests typically fall within the range of $5,000 to $30,000. For more information, see www.fishamerica.org. All grant applications should be submitted to: Grant Applications—NOAA/FAF RFP; FishAmerica Foundation;

225 Reinekers Lane, Suite 420; Alexandria, VA 22314. Proposals must be received no later than March 12, 2003 at 5:00 p.m.

Trash or Treasure—Appraisals Raise Money for Massachusetts Watershed Association

The Nashua River Watershed Association has come up with a new idea in fund raising. Saturday February 8, the Association will host Appraisal Day. Anyone interested is welcome to bring their treasures to receive a verbal appraisal from a nationally renowned appraiser. The public is encouraged to bring out paintings and prints, ceramics, furniture, decorative art, and "discovery" items (consisting of the wild assortment of doodads everyone seems to possess). Appraisals will cost $10 for one item and $25 for three items. Proceeds from the fund-raising day will go toward the Association's environmental education, water quality, and land-protection programs. To find out more, visit www.nashuariverwatershed.org and click on the link for Appraisal Day.

NiSource Environmental Challenge Fund Opportunities

The Environmental Challenge Fund is a not-for-profit corporation that provides support for local natural resource and wildlife enhancement projects. Projects that directly enhance, protect, or preserve the environment and produce tangible results can receive up to $5,000 in grant funding. All projects must provide a 20 percent cash or in-kind match of total project costs. Property acquisition, landscaping and beautification projects, staff positions, or schools where the project falls within the educational curriculum are not eligible. Funding is also limited to states served by NiSource companies (New England, Indiana, Kentucky, Ohio, Pennsylvania, Maryland, Virginia, and West Virginia). The online application must be completed and submitted by February 1. NiSource will award grants in April. For more information, visit www.nisource.com/enviro/ecf.asp.

Please send any news you have on funding mechanisms available to local community organizations to restorationupdate@tetratech-ffx.com.

News and Announcements

Calling All Photographers: 2nd Annual Wetland Photography Contest

The U.S. Environmental Protection Agency's (EPA) Wetlands Division is sponsoring a wetland photography contest focusing on images showing the wildlife of wetlands, specifically birds, mammals, amphibians, reptiles, insects, and crustaceans. EPA is looking for high-quality images that capture the biodiversity and beauty of wetlands in different regions of the United States and throughout all seasons of the year. The winning photographs will be used to produce a 2004 wetlands calendar that will be prominently displayed on the EPA Web site and at the National Wetland Awards ceremony in Washington, DC in May 2003.

The deadline for submission is March 1, 2003. For more information and details on how to submit your photographs please visit www.epa.gov/owow/wetlands/photocontest2003.html. If you have any questions or need additional information about the contest, please call 1-800-832-7828 and ask for wetland photo contest. To view the winning photographs of the 2002 wetland photography contest visit www.epa.gov/owow/wetlands/photocontest2002.html.

Restoration Effort Helps Minnesota Wetland Emerge from Medical Waste Dump

In late October the Minnesota Metropolitan Airports Commission (MAC) began work on the Sergeant's Lake Wetland Restoration project. The project involves excavating and removing an old medical waste dump created in the 1940s in what is now Fort Snelling State Park (located at the confluence of the Mississippi and Minnesota Rivers). The Sergeant's Lake Wetland Restoration project will return the area northwest of Picnic Island to a wetland and upland forest area more appropriate to the park's Mississippi and Minnesota River floodplain setting.

The wastes discovered in the dump include construction debris such as concrete rubble, asbestos, contaminated soil, and railroad ties, as well as noninfectious medical wastes such as broken hospital glassware, medicine containers, syringes, and tubing that may have been disposed of by the old Veterans Administration hospital. Rain and snowmelt seeping through the waste leach pollutants into the ground and surface water, posing a potential risk to the environment. Unfortunately, lowland and marshy areas near rivers were commonly used as waste disposal sites in the years before state Solid Waste Rules were established.

The MAC is funding the cleanup as part of an agreement with the Minnesota Department of Natural Resources (DNR) to replace wetland acres lost to airport construction. The MAC, DNR, and the Minnesota Pollution Control Agency (MPCA) are working cooperatively on the project to restore the wetland in one of Minnesota's most popular state parks.

The cleanup and restoration will be completed by spring 2003. The DNR will plant hundreds of trees and seed with native plants in the approximately 5.5 acre area. The cost of these efforts is an estimated $1 million dollars. For more information see www.pca.state.mn.us/news/data/newsRelease.cfm?NR=256020&type=2, or contact Katherine Carlson of the MPCA at 651-297-1607.

Louisiana Begins More Large Coastal Restoration Projects

On November 25, 2002, The Louisiana Coastal Wetlands Conservation and Restoration would mean for isolated wetlands across the country.

On January 10, 2003, the Bush Administration announced a pair of actions that environmental groups fear will significantly reduce the acreage of wetlands and waters protected by the federal Clean Water Act. The Administration also issued an "Advance Notice of Proposed Rulemaking" that will further review conditions under which waters may be classified as "waters of the United States."

The Bush Administration's Announcement can be found at http://www.amrivers.org/docs/cleanwaterannouncement11002.pdf and testimony regarding that announcement is available at http://www.amrivers.org/docs/cleanwatertestimony91902.pdf.

Upcoming Conferences and Events

New Listings

Society for Conservation Biology Annual Meeting: Conservation of Land and Water Interactions

June 28–July 2, 2003
Duluth, Minnesota

The zones where terrestrial habitats meet aquatic habitats such as ocean-shores, lakes, streams, or wetlands are dynamic regions. They are subject to a host of human and natural disturbances. They have complex spatial and temporal patterns and linkages. This conference will encourage dialogue on this subject as well as a host of other conservation biology topics. For more information on the conference, visit the Web site www.d.umn.edu/ce/conferences/scb2003, or contact the continuing education center at the University of Minnesota, Duluth 218-726-6296 or 2003@conservationbiology.org. Or speak with the Conservation Biology program director, Teri Williams, at 218-726-8835 or e-mail: twillia1@d.umn.edu.

Lessons Learned: Gateway to Flood Mitigation

St. Louis, Missouri
May 11–14, 2003

The Association of State Floodplain Managers invites environmental professionals, including engineers, consultants, nonprofit organization staff, researchers, and educators dealing with all aspects of floodplain management, to attend their annual conference. The conference will offer concurrent sessions, training workshops, technical field tours, plenary sessions, and networking events that address the many problems and issues associated with reducing flood damages, managing floodplain resources, and making communities more sustainable. Program sessions will address a wide range of topics such as watershed planning and management, riparian protection, coastal zone mapping, and environmental impacts. For more information, visit www.floods.org/STLouis or contact Diane Brown, Association of State Floodplain Managers at diane@floods.org or by phone at 608-274-0123.

Previous Listings

2nd Annual Northwest Stream Restoration Design Symposium
February 4–6, 2003
Stevenson, Washington

This symposium, sponsored by River Restoration Northwest, OSU-CWEST, OSU-Civil Engineering, and Portland State University, will address stream-restoration issues in the Northwest. The program will include the following

- Design Methods—Long, invited presentations that will review the basic principles of restoration design as well as state-of-the-art design methods.
- Technical Sessions—Short presentations on restoration projects, using examples of design, monitoring, and lessons learned.
- Poster Displays—Technical project presentations in poster format.
- Special Luncheon and Evening Speakers—Speakers will address critical topics for restoration professionals and highlight topics of regional interest.
- Optional Field Trip—Sponsored by Inter-Fluve and KPFF Engineering, this field trip will take place on Friday and will showcase regional restoration projects.

For more information, see http://rrnw.org/Skamania2003.

To post your restoration news and announcements, please send information to restorationupdate@tetratech-ffx.com.

Restoration-Related Web Sites

www.creekbank.com/index.html
Creekbank.com. Creekbank.com is the flyfishing angler's resource for preservation and restoration of coldwater streams. The site has links to various stream-restoration resources, a message board, and descriptions of funding sources. *This Web site would be useful for anyone looking for resources for their stream-restoration projects.*

www.greenbeltconsulting.com
Greenbelt Consulting. This Web site provides property owners with information that will help them make informed decisions when developing their land, especially near streams. Fact sheets are provided on preserving riparian areas, reducing erosion, and managing vegetation. The Web site also highlights the benefits to landowners of preserving riparian areas. *This Web site would be helpful to landowners who are seeking information on riparian area protection.*

www.efo.org/brown_bag.html
Environmental Federation of Oregon. The Environmental Federation of Oregon is a federation of nonprofit environmental organizations dedicated to preserving the environment. The Federation seeks to

preserve natural areas in Oregon for future generations through funding and education. The Federation also offers a series of presentations on wetland restoration, river conservation, and other restoration related topics. *This Web site would be useful for anyone seeking information on how to spread the word about the importance of restoration.*

www.tera.mp.usbr.gov/index.htm
Tracking Ecosystem Restoration Activities (TERA). TERA is an information forum for federally funded ecosystem restoration projects. TERA is a comprehensive tracking system detailing the financial and physical status of projects funded by the Bay-Delta Act and the Central Valley Project Improvement Act. *This Web site provides information on restoration projects under way in California.*

http://www.mhhe.com/earthsci/geology/mcconnell/demo/index.html
Groundwater and Wetlands. Groundwater and Wetlands is an online tutorial provided by McGraw-Hill Companies. Originally designed as an educational activity, the site can be useful to anyone interested in learning about the hydrologic cycle, rock properties, groundwater systems, high plains aquifer, human modifications of groundwater systems, and wetlands. Each section contains creative illustrations and photographs, as well as nontechnical text. A series of quizzes and exercises are also provided, along with links to additional information. *This Web site provides a useful, interactive educational program for anyone interested in learning about wetlands.*

www.wvrivers.org
West Virginia Rivers Coalition. The coalition seeks to aid the conservation and restoration of West Virginia's rivers. This Web site has an informational section including names of watershed groups across West Virginia, West Virginia funding sources, and information specific to each West Virginia Watershed. The coalition has also developed a strategic plan for protecting and restoring the state's rivers that can be downloaded from the site. *This Web site provides a good example of a statewide effort to protect and restore rivers.*

http://wetlands.fws.gov/Pubs_Reports/isolated/report.htm
Geographically Isolated Wetlands: A Preliminary Assessment of their Characteristics and Status in Selected Areas of the United States. This online report explores the importance of geographically isolated wetlands—wetlands surrounded by uplands—especially in terms of providing essential wildlife habitat. The report includes the results of a study that estimates the spatial extent of potentially isolated wetlands across the United States. *This report should increase public awareness of these significant and vulnerable wetlands.*

http://www.fiu.edu/~ecosyst/
South Florida Wetlands Ecosystem Lab. This Web site provides information on the wetlands-related research currently underway at the Ecosystem Lab. Current research studies include phosphorus dosing, mangrove systems, the Florida Everglades, and Taylor Slough. *This Web site would be useful for anyone looking for current information on Florida wetland health and restoration projects.*

www.dnr.state.oh.us/wetlands
The Ohio Department of Natural Resources Wetlands Site. This Web site provides general information about wetland types, the history of Ohio wetlands, current restoration efforts, and state

wetland regulations. *This site would be useful for anyone seeking information about wetlands and the steps currently being taken to protect them throughout Ohio.*

Let us know about your restoration-related Web site. Please send relevant URLs to restorationupdate@tetratech-ffx.com.

Information Resources

Living on the River: A Landowner's Guide to Streambank Protection and Flood Management on the Dungeoness River
by the Callam County Department of Community Development, 1998

This 42-page booklet covers a host of activities and resources to assist property owners with streambank protection and flood management projects. Chapters address floods and riparian zones, minimizing flood damage, helping fish and wildlife, public access to the river, and land conservation options. The book also contains a resource section for further information. For more information, contact Ann Soule of the Callam County Department of Community Development at 360-417-2424 or asoule@co.callam.wa.us.

Chesapeake Bay Riparian Handbook
by the United States Department of Agriculture and the Chesapeake Bay Program.

Riparian forest buffers have been identified as a valuable nutrient reduction tool when used in conjunction with other conservation practices. The purpose of this handbook is to provide professional land managers and planners with the latest information on the functions, design, establishment, and management of riparian forest buffers. This handbook would benefit agencies and private concerns that provide technical assistance in the field, local governments who want to use the handbook as a technical basis for decision making, policy makers, public/consulting, or service/private foresters, and professional land managers, both industrial and public. The book is available for download in pdf format from the Web site www.chesapeakebay.net/pubs/subcommittee/nsc/forest/handbook.htm.

Streamside Livin'
by the Thurston County Storm and Surface Water Program and the Thurston County Stream Team, 1999

This 8"x11" size booklet was designed to educate streamside residents and property owners about stream care, stewardship, and salmon health. This guide lists common problems alongside possible solutions. It showcases real-world examples of water quality improvement projects and provides contact phone numbers of project staff. Additionally, this booklet includes pictures of Thurston County streams where salmon spawn, captioned with comments about the history of the stream and other details. A Web version can be downloaded from http://www.co.thurston.wa.us/wwm/stream/streamsidefirstpage.htm. Or to obtain a paper copy, e-mail Susie Vanderburg at vanders@co.thurston.wa.us.

If you'd like to publicize the availability of relevant information resources, please send information to restorationupdate@tetratech-ffx.com.